U.S. Environmental Protection Agency
Office of Transportation and Air Quality
January 28, 2000

FY00 State and Tribal Assistance Grant Request for Proposal:
Methods for Estimating Lawn and Garden Activity at the Local Level

I. Background

With nonroad equipment contributing a significant fraction of emissions in many areas, states are increasingly interested both in reducing nonroad emissions and in gaining "credit" for such reductions. The basis for evaluating the impact of emission control policies is an accurate baseline nonroad emissions inventory and projection. The components of a nonroad emission inventory are the emission rates (mass of pollutant emitted per unit of use or work) and activity for each equipment type. Activity as used here includes estimates of engine populations, power level, load factor (fraction of available power), fuel consumption, and hours of use per unit of time.

EPA is developing a nonroad air emissions inventory model called NONROAD. This model will offer national default values for emission rates, power levels, load factors, and hours of use. In addition, the model also geographically allocates equipment populations from the national to the county level using various indicators. For lawn and garden equipment, the indicators are single and double (duplex) family homes for residential equipment. For commercial equipment, the indicators are number of employees in landscaping and horticultural services. While these defaults and allocation indicators provide a reasonable basis for developing local inventories, they may not produce the level of accuracy for equipment populations, patterns of usage, and distinctions between residential and commercial usage that are desirable for such localized studies. For example, the commercial lawn and garden category tends to have equipment with higher horsepower engines and, unlike residential lawn and garden equipment, larger equipment that uses diesel engines. Activity will also vary between different areas of the country (e.g., lawn and garden equipment will be used more in the Sunbelt than in the North because of the longer growing season). In some local areas commercial lawn care services might be used more by households than in other areas. Thus, it is important to gain a better understanding of equipment populations and usage patterns at the local level.

Model users will be encouraged to substitute local data to improve upon the accuracy of the default estimates in NONROAD. Emission rates are unlikely to vary much with location, but activity will vary considerably across the country. Unfortunately, information on how States may collect such local data is scarce. Methods for estimating local nonroad activity are needed so states can verify their nonroad inventories. The focus of this proposal is to develop one or more methods states can use to estimate or measure local activity for residential and commercial lawn and garden equipment, since this category represents a significant portion of total nonroad emissions.

II Project Description

The goal of this proposal is to collect detailed activity data in one or more areas and use these data to both develop more practical methods states can use to quantify local activity for residential versus commercial lawn care and to improve estimates of the local emission inventory. Activity parameters of interest include: engine populations (by power level and age), load factor, fuel consumption, and hours of use by age for annual, seasonal, and daily time periods.

More than one method will probably be necessary, since there is probably not be one method that best quantifies all these activity parameters. The final methods can take the form of a retrospective survey, diaries, or direct observations which would determine the hours of use of residential and commercial lawn and garden equipment for local areas, as refinements to the "top-down" method used by NONROAD to allocate national populations to local areas, or approaches for states to validate the default values at the local level. In addition, programs could be designed to evaluate other, cheaper methodologies for deriving local estimates (i.e., comparing actual equipment counts and operating meters to other more easily available types of data such as number of lawn care companies, local employment in lawn care trades, etc). The methods need to be practical for the states to adopt, in terms of cost and ease of use, and written in a detailed, clear manner for the states to use directly, if desired.

One possible approach is given as follows; however, applicants are encouraged to propose alternative approaches. Presently, EPA believes that step 1 below is an essential aspect of any acceptable approach.

1) Collect detailed information on both residential and commercial lawn and garden activity for one or more selected areas and use the data as a benchmark for evaluating practical, alternate methods. This could be done via retrospective surveys, diaries, direct observations, or a combination of these. The target area(s) should comprise one or more counties. If sampling is used, it must be carefully randomized and the reasoning behind the randomization process described in detail.

2) Perform a review and analysis of known methods that have been used by state and local agencies and EPA/NONROAD to collect local residential and commercial lawn and garden activity data. In addition, seek ideas and techniques from other sectors that have attempted to quantify activity parameters of interest, such as fuel consumption. Develop descriptive methods which could be used to indicate the level of lawn and garden activity in an area such as number of local lawn care companies**,** size (in valuation and in employees) of local lawn care companies, and equipment inventories.

   Evaluate the methods in terms of their accuracy (e.g., have the results been validated in some way against other known data, and if not, could they be), cost, ability to collect activity-related information, range of geographic applicability, ability to easily repeat or update estimates, ability to produce estimates over various time periods (i.e., annual,

seasonal, and daily), and applicability to other types of equipment.

3) Evaluate and compare the methods with detailed information collected on local residential and commercial lawn and garden activity. Recommend one or more methods, or develop one or more new methods that produce the activity levels for both residential and commercial lawn care.

4) Apply the recommended methods to other areas and compare with existing estimates.

5) Prepare detailed guidance on the recommended method(s) in a form the states could use directly.

III. Deadline

The deadline for submitting proposals (original and six copies) is **March 27, 2000.** Proposals should be sent to:

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2000 Traverwood Drive
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[Note: Proposals may be faxed or sent via email, but must be followed by a hard copy original.]

IV. Funding Issues

One grant will be awarded, with the amount of available funding not to exceed $300,000. If a proposal with a 2-year project period is submitted, the budget and cost estimate should be designed to indicate what will be accomplished in each of the first and second years. The competition process will be managed by OTAQ. The selected proposal will be awarded by the appropriate EPA Regional office and funded through either Clean Air Act (CAA) Section 103 or CAA Section 105 authority.

While CAA Section 103 does not require matching funds, CAA Section 105 mandates that eligible agencies provide matching funds of at least 40%. Therefore, if an air pollution control agency submits a proposal for which they do not already have matching funds, they must include a statement in their proposal indicating that the match could be met if their proposal is selected. Organizations unable to meet a required match will be considered ineligible. (This Section 105 requirement does not apply to multi-state organizations.) Organizations which are unclear as to their matching status are recommended to contact their EPA Regional Grant Coordinator.

V. Eligible Organizations

CAA Section 103 authority can be used if the purpose of the work is to coordinate or facilitate a multi-jurisdictional approach to carrying out the traditional prevention and control programs required by the CAA. Proposals can only be accepted from multi-jurisdictional organizations. A multi-jurisdictional organization is defined as a non-profit organization whose board of directors or membership is made up of CAA Section 302(b) agency officers and whose mission is to support the continuing environmental programs of the states. As stated above, CAA Section 103 has no match requirement.

Under CAA Section 105, proposals can only be accepted from air pollution control agencies as defined under Section 302(b) of the Clean Air Act. These include, but are not limited to, single state and local air pollution control agencies. Multi-jurisdictional organizations are not eligible. CAA Section 105 has a 40% match requirement, as described in Section IV. The match may include in-kind as well as cash contributions.

Whether CAA Section 103 or CAA Section 105 authority is used, interested organizations which are not eligible are encouraged to create partnerships with eligible organizations. In that situation, the eligible organization would be required to submit the final proposal and serve as the funding recipient if selected.

VI. Criteria for Selection

Proposals will be evaluated based on the following criteria and weighted as follows:

- Qualifications and previous experience in estimation of inventories, survey methodologies, and data collection (15 points)
- Program design/technical approach (40 points)
- Creativity and innovation (consideration of issues; including portability of approach and aspects not specifically identified in RFP) (20 points)
- Plan for spending project funds (appropriate levels of funding) (10 points)
- Project time frame (5 points)
- Communication plan (schedule of deliverables/survey instruments, progress reports, draft and final reports, other) (10 points)

VII. Content of Proposal

Proposals should include: background, project summary, description of specific actions to be undertaken (including estimated time line for each task), work products, estimated budget (including estimated cost for each task), time frame for project from initiation through completion, project contacts and any other relevant information to assist in the selection process. Please note that submission of a proposal does not guarantee funding. Only the selected organization will be required to submit a complete EPA grant application package to the appropriate EPA Regional Office.

Allocation of funds will depend ultimately on quality and merit of proposals.

VIII. OTAQ Contact

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